

Serial No.: 10/717,630
Atty. Docket No.: P68978US0

REMARKS

The Office Action mailed January 31, 2006, has been carefully reviewed and, to facilitate prosecution, Applicant requested a personal interview which was conducted by Examiner Daniels and his supervisor, Examiner Michael Colaianni, on March 9, 2006. Applicant was represented by the inventor, Michael Elo, and Bobby Mann, as well as Applicant's representatives, Harvey B. Jacobson, Jr. and Suzin Bailey. Applicant sincerely thanks both Examiners for their time and cordiality in conducting the interview.

In preparation for the interview, Applicant provided the Examiner (via facsimile) with a revised set of claims 1-17, including proposed amendments to claims 1, 5, 8, 16 and 17, and new claims 18-28. Claims 9-15 were withdrawn.

During the interview, Applicant summarized the method of the claimed invention and discussed the proposed amendments to independent claims 1 and 16, as well as new independent claim 24. Agreement was reached that each of the three independent claims currently under consideration, as set forth in the revised set of claims, distinguished over the cited art as will be discussed in greater detail hereinafter with specific reference to the Detailed Action set forth in the outstanding Office Action.

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As an initial matter, the Examiner stated that the claimed invention included two distinct inventions, and required restriction between Invention I, claims 1-8, 16 and 17, drawn to a method for processing, classified in class 264, subclass 143; and Invention II, claims 9-15, drawn to a pelletizing apparatus, classified in class 425, subclass 68. Applicant hereby confirms the provisional election made by Mr. Jacobson on December 19, 2005, to prosecute Invention I, claims 1-8, 16 and 17. While the provisional election was made with traverse, in view of the agreement reached during the interview, Applicant has withdrawn the traverse and canceled the non-elected claims.

As a further matter at the outset, Applicant has herein amended the specification to more correctly designate the text on pages 6 and 11 referring to "an air volume". As amended herein, this is more correctly, "a flow rate" as evident by the units "m³/hour" associated with the cited value of 100 in each of the amended paragraphs. Further support for this change is found on the second paragraph of page 15, which refers to the "air injection flow rate ... of 100 m³/hour".

By this Amendment, claims 9-15 have been canceled, claims 1-5, 8, 16 and 17 have been amended, and new claims 18-28

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have been added. Claims 1-8 and 16-28 are pending in the application. Claims 1, 16 and 24 are independent.

In the Office Action, the Examiner objected to claims 1 and 17 as containing informalities, requiring that the acronym "PET" be replaced by the chemical name of the polymer processed in the claimed method. Applicant has herein amended all of the claims in which the acronym previously appeared, as requested during the interview. Withdrawal of the objection is therefore requested.

The Examiner provisionally rejected claims 1, 2, 8, 16 and 17 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 13 and 14 of copending Application No. 10/954,349 ("the '349 application") in view of U.S. Patent No. 5,830,981 to Koreishi. The Examiner also provisionally rejected claims 1, 16 and 17 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 19 of the '349 application.

During the interview, Applicant stated that revised claims are to be filed in the '349 application to overcome the provisional double patenting rejections and that, if necessary, a terminal disclaimer would ultimately be filed. Applicant also requested that issuance of the initial Action in the '349

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application be deferred, if possible, until after the mailing of the next Action in the present application.

In view of the foregoing, Applicant requests that any further action that may be necessary in response to the provisional rejection be deferred pending receipt of a Notice of Allowance.

The Examiner rejected claims 1, 3, 4, 7, 8, 16 and 17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,544,525 to Balint in view of U.S. Patent No. 3,988,085 to Krchma. Also under 35 U.S.C. 103(a), the Examiner rejected claims 5 and 6 as being unpatentable over Balint in view of Krchma and further in view of U.S. Patent No. 4,632,752 to Hunke, U.S. Patent No. 5,607,700 to Kando, and U.S. Patent No. 5,895,617 to Mizuguchi.

The amendments to claims 1 and 16 as set forth herein correspond with the proposed amendments discussed during the interview, while also incorporating the replacement of "PET" with "polyethylene terephthalate" as already noted.

As discussed during the interview, the present invention as set forth in claim 1 is directed to a method for processing polyethylene terephthalate polymers into pellets using an apparatus including an underwater pelletizer and a dryer. The

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method includes extruding strands of polyethylene terephthalate polymer through a die plate for cutting in the underwater pelletizer, cutting the polyethylene terephthalate polymer strands into pellets in a cutting chamber thereof, transporting the pellets out of the cutting chamber to the dryer as a *water and pellet slurry*, and injecting a high velocity gas into the *water and pellet slurry* to generate a *water vapor mist* and enhance the speed of the pellets into and out of the dryer, with the pellets retaining sufficient internal heat upon exiting the dryer for crystallization of the pellets.

Balint discloses a process for crystallization, drying and solid-state polymerization of polyesters. According to the Balint process, pellets are formed through extrusion using an underwater pelletizer 4 which is associated with a chamber 15a having a quench medium such as water therein for contacting and solidifying the extruded polymer (see column 3, line 71 to column 4, line 28).

Once entrained in the water, the pellets and water are directed through line 7 to a dewaterer unit 9 or dryer (see column 4, lines 53-57). "Centrifugal dewatering is accomplished by discharging the water at exit 11" of the dewaterer/dryer so as

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to separate the pellets from the water bath (see column 4, lines 70-74).

With most of the water having been removed, the pellets are then directed to a fluidizing column 15 for crystallization. A gas flow is introduced via inlet 14 to speed the pellet from the dewatering unit 9 to the column 15 where they are entrained in a heated gas, introduced through plenum chamber 25, for crystallization (see column 5, lines 2- 20).

Unlike the present invention, Balint does not inject a high velocity gas into the water and pellet slurry to create a water vapor mist and enhance the speed of the pellets into and out of the dryer. Instead, Balint introduces a gas flow after the dryer which, since the water has already been removed, does not create a water vapor mist flow.

Krchma discloses an apparatus for forming uniform shaped particles of thermoplastic material. Molten thermoplastic material is directed into a flume 2 of cooling liquid where the material is broken into strips 5 and discharged into a stream of cooling fluid 3 in towers 26 and 29. The weight of the strips 5 causes them to sink to the bottom of the first tower 26. In order to move the strips 5 upwardly to the exit area adjacent the top of the second tower 29, a high velocity stream of liquid or

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air is introduced into the cooling fluid 3 through pipe 33 to create an upwardly-directed bubble flow of the fluid and strips (see column 6, lines 25-37).

The bubble flow taught by Krchma is not comparable to the injection of high velocity gas in a water and pellet slurry to create a *water vapor mist* as claimed by the present invention. Rather, in Krchma the cooling liquid 3 continues, and is intended to continue, fully engulfing and cooling the strips contained therein, both before and after the fluid injection introduced through pipe 33, as results from the bubble flow.

For at least the foregoing reasons, and as agreed during the interview, claim 1 is patentable over the cited art.

As also discussed during the interview, according to the inventive method of claim 16 includes extruding a crystallizing polymeric material into strands, cutting the extruded strands into pellets in a water stream, transporting the pellets in the water stream as a water and pellet slurry, and injecting an inert gas at a high velocity into the pellet and water slurry such that *the pellets retain sufficient heat for crystallization of the polymeric material without the application of external heat*. Hence, because of the inert gas injection into the pellet and water slurry according to the claimed method, a

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separate crystallization step is not required. This also is not shown by the prior art.

As already discussed, the system taught by Balint, as in other conventional systems, requires that polymer pellets which have been formed by extrusion, quenched in a liquid medium and thereafter separated from the liquid medium, undergo a subsequent processing step in which heat is introduced to the pellet stream in order to effect the necessary crystallization of the pellets (see column 5, lines 7-20 and 67-71). This step is eliminated according to the method of the present invention.

Accordingly, claim 16 is patentable over the cited art.

Finally, new claim 24 provides for the method of the present invention for processing polyethylene terephthalate polymers into crystallized pellets using an apparatus having an underwater pelletizer and a centrifugal dryer. Strands of polyethylene terephthalate polymer are cut into pellets in the underwater pelletizer, and transported out of the pelletizer as a water and pellet slurry. A high velocity inert gas is introduced into the water and pellet slurry to enhance the speed of the pellets through the centrifugal dryer located *downstream of the gas introduction*, with the pellets exiting the dryer with sufficient internal heat for crystallization thereof. This

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introduction of high velocity gas at a position upstream of the centrifugal dryer is not shown or suggested by the prior art as has already been discussed and, as agreed during the interview, distinguishes claim 24 over the prior art.

For at least the foregoing reasons, claims 1, 16 and 24 are in condition for allowance, along with claims 2-8, 17-23 and 25-28 as claims properly dependent thereon and for the subject matter contained therein.

Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,

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